

#### ABSTRACT OF THE DISCLOSURE

Vascular endothelial function in terms of flow-mediated dilation (FMD) of peripheral arteries can be assessed reliably by measuring beat-to-beat pulse-wave conduction time (PCT) simultaneously for two symmetric segments of arteries locating on the right and left sides of body. When reactive hyperemia is induced in the peripheral tissues on one side, the time dependent changes in PCT caused by FMD on that side can be detected as the beat-to-beat differences in PCT between two sides ( $\Delta$ PCT).  $\Delta$ PCT would provide a sensitive and specific assessment of the FMD response, because the influences of the systemic changes in hemodynamic and neurohumoral factors common to both sides are subtracted out. In addition, measurement of PCT requires no skillful technique and is advantageous in that the apparatus is inexpensive.